National Institutes of Health Visiting Fellows Committee

NIHVFC Newsletter

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Contributing to global science development by building careers

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Indo-US Science and Technology Forum

By Dr. Athulaprabha Murthi

As a post doc, one is always on the lookout for funding and networking opportunities. On December 7th 2009, one such opportunity presented itself in the form of Indo-US science and technology forum (IUSSTF) general assembly meeting. I am sure many of you did avail of this opportunity but for those who could not attend, I hope this short synopsis of the event would give you an idea of the functions and missions of the IUSSTF, and more about the changing trends of science in US and India and maybe, globally. Personally, I was not aware of such a society and it came as a surprise to me that it has been in existence since March 2000. Moreover, in the past decade it has achieved significant strides in promoting and facilitating cross-continent collaborations in science, technology, engineering and biomedical research, the primary goal for which the society was set up. IUSSTF strives

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Science Voices from Home

By Dr. Stephanie Roessler and Dr. Shadia Zaman

The Visiting Fellows Committee (VFC) organizes with the help of OITE an informal networking seminar series called 'Science Voices from Home' (SVH). The SVH project tries to put in contact foreign post-docs at the NIH with scientists who do research in their home countries. The goal is to provide information about fellowships and grants to do research in their home country and to facilitate their return home in the future.

From India, VFC and Fogarty International Center hosted Dr. M.K. Bhan, Secretary of India's Department of Biotechnology, and Dr. V.M. Katoch, Sec-

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to achieve its goals by awarding grants, fellowships, and travel awards for collaborative research between the 2 countries, as well as nurture young talent. It also conducts workshops to increase awareness as well as promote scientific exchanges between scientists from different areas of expertise. The society also strives to build public-private partnership and entrepreneurship to foster elements of innovation and enterprise through knowledge networking between academia and industry. The funding for the society is through interest earnings from the endowments of the governments of the 2 participating countries. As a non-profit society, IUSSTF also has the freedom to receive grants, gifts and donations and private benefactor.

Every society needs leaders in the field to govern its functioning. The governing body of IUSSTF comprises of the leaders of scientific societies from both India and United States, including the Director of the National Science Foundation (NSF), Director of Fogarty International Center (FIC), Director of National Institute of Standards and Technology (NIST) from the US side. The Indian counterparts include the secretary of the department of Biotechnology, Director of Center for Scientific and Industrial Research (CSIR), Director of Indian Institute of Technology (IIT). There are also industry representatives in the governing body; the US side has the chief technology officer from Lockheed Martin, while in India, it is technology officers from Ashok Leyland and TATA chemicals. At present IUSSTF is co-chaired by Norman Neureiter, the director of AAAS and T. Ramaswami, secretary of Department of Science and Technology. Just based on the composition of its governing body members, it is obvious that IUSSTF strives to build bridges between the different branches of science and technology, the academia, Industry and Policy.

In the decade of its existence, it was the first time that NIH hosted the IUSSTF governing body meeting. The presentations and panel discussions spanned academia, industry and policy perspectives from both the participating countries. The day began with a welcoming address by US co-chair of IUSSTF, Norman Neureiter. The morning belonged to the policy makers. As one of the speakers anecdotely pointed out, the day proceeded towards saner people, from policy makers to industrialist and finally to academicians. The perspectives of the goals of IUSSTF seem to differ and coalescence in some ways among these different groups. Policy makers lauded the collaborations between the two countries, pointing out to historically successful collaborative efforts, such as the IIT Kanpur in the educational sector and the Indian green revolution to achieve self-sufficiency in grain production in the science, technology and innovation sector. The changing tides of education, science and research in India, changes in global technology needs, the importance of creativity, fostering and nurturing innovation, training future researchers, entrepreneurs, policy makers capable of working in a multidisciplinary environment occupied the rest of the day.

Among the invited speakers in the morning session was the Indian Ambassador to the US Meera Shankar, the chief technology officer of Obama administration Aneesh Chopra and Director of NIH Dr. Francis Collins. Meera Shankar commended the forum for its work during the past decade while encouraging the governing body to work towards minimizing administrative office duplications and identify the means to foster a culture of bringing innovation and success to its zenith. She pointed out that the brain drain of talented individuals who left India to seek brighter future elsewhere during the 1970 and 1980s, is not only being reversed but rather converted into a more globalized 'brain circulation' where ideas, technology and innovations are shared by effective and successful collaborations among scientists around the world. Meera Shankar also released the annual report of

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IUSSTF in a small and colorful ceremony. The report is available online at www.indousstf.org as is information about the various programs supported by IUSSTF.

The energetic Aneesh Chopra spoke about the changing political atmosphere. Some 3 decades back, exchanges between India and US were difficult owning to the distrustful atmosphere created by the cold war. The process of breaking the ice, and nurturing friendly exchanges of ideas and technologies in various fields started in the 1990s and has since continued to forge and break grounds in various areas. Much has been accomplished in the infancy of the relationship between US and India in the past 15 years. He urged the forum to work towards education and human development, clean energy and public health while pointing out the efforts that are already on the way to address these issues. Robert Glass, the director of Fogarty International Center (FIC), emphasized the collaborative efforts by investigators in both countries and called for more of the same to tackle the current public health concerns, which have shifted focus over the years from infectious diseases to chronic diseases such as cardiovascular, diabetes, etc. The director of NIH, Dr. Francis Collins, identified three major areas for Science and Technology collaborative opportunities between India and US, Genomics, Nanotechnology and Computational biology, where each country stands to gain tremendously by the knowledge base and skills of the other. He also mentioned global health initiatives, in terms of funding basic science discoveries that can be translated into therapeutics, NIH investments in public health initiatives and the need to support creative, innovative and risk taking individuals.

Industry

The vice president of Lockheed Martin, Dr. Ray Johnson, and the managing director of Ashok Leyland, R. Sheshasayee, provided the industrial perspectives. As both, pointed out, the scenario of the world has changed drastically in the last decade alone. Technological advances in telecommunication, transport, aviation, has not only shrunk the world, but also created a matrix of interconnections making it a more inter-disciplinarily functioning world. Security is connected not just to personal and national but also economic growth, economic growth is closely related to industrialization, which affects climate change. In such inter-disciplinary environment, working across different disciplines becomes the key to innovation. As it was repeatedly pointed out throughout the day, innovation is not to be equated to invention. Invention is creation of the idea, while innovation is development of the product useful to the society. Bridging the gap and building the pathway from invention to commercialization of the product is not always clear. This is one of the areas of collaborations between academia and industry. In not-so developed nations, the lack of resources, expertise creates a hurdle in the process. It therefore is an obvious area of active collaboration between the more experienced and developed US and the still developing India.

Product development in industry is impacted by world events to deal with global issues, terrorism spurned the requirement for combat, defense and surveillance technologies, climate change impact the industries outlook for opportunities in cheaper fuel, lower emission automotives, energy storage solutions so on and so forth. All these, also spurn, research and development. In the midst of the static or negative economic growth in major parts of the world, there has been a positive growth in India, which increased the number of companies that look to establish market in India. One-size fits all however, does not always work for consumer products, so most industries have to adapt their products to fit the need of the consumer in a particular part of the globe as did products coming to the Indian market. This is a striving

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force of innovation. This change is not due to the capability of the market but rather the negotiation or demand of the consumer that is driving it. One such consumer driven product as rightly pointed out is the Nano car. It is the cheapest car selling at $2500, with high mileage, emission standards of euro3, passing of the euro safety test and still affordable. Though not an innovative technology, it is a configuration of technologies to get the right value to the Indian consumer. Similar to the automotive industry, the Pharmaceutical industry is developing drugs at costs of 30-40% lower than that in developed nations. The Indian industry representative referred to a change sweeping across the many areas of industry. A tremendous shortage of experience in product development and research development exists in India, which has prompted the industry to recruit talent from around the world. A traditionally slow Judiciary system has adapted to resolve intellectual property rights issues at previously unheard of rates. The industry adapts its products to suit specifically the Indian community, striving to make it cheaper and without compromising the quality.

Research funding and Academics

Apart from the NIH and NSF, the US Department of Energy (DOE) is a major funding institution that supports work in applied technology. DOE and Indian researchers are collaborating on various scientific projects as Dr. Steve Koonin from the Department of Energy pointed out. US-India collaborates in a project involving national gas exploration looking for methane hydrates, which is a potentially important energy resource for both countries. Biofuels is a huge opportunity to look for innovative tech to reduce reliance on fossil fuels and energy. An ongoing collaborative project in Assam, India involves identification and development of emission free energy source to reduce dependence on coal. At present, DOE funds a project to explore the scientific feasibility of magnetic fusion (7 countries are partners in the process including India, China, Japan and S. Korea). One of the most interesting talk of the day was by Dr. T. Ramaswami, the secretary of Science and Technology division of the government of India. He touched many topics that have acquired much heat in the last few years, the increasing investments especially by the Indian government to build scientific infrastructure, change in the academics of research where instead of doing basic science separately, it is being partnered with solution based research and innovation. This he believes is where the future lies as it feeds positively into the society and community, solving many of the present day problems. One of the ways in which the S&T department is approaching this is by offering numerous scholarships starting from the high school level to inculcate a healthy passion for science in youngsters and encourage them to pursue through to masters and doctoral levels.

All academic presentations emphasized the need to train people in multidisciplinary sciences, provide facilities and environment to promote creativity, and translate basic science done in laboratories to something useful to the community at large. According to the Director of IIT Kanpur, Dr. Sanjay Dhande, the academic thought process of collaboration goes beyond the financial and economic aid collaborations. He pointed out that the present focus in India has changed from undergraduate to post-graduate collaborations. He called for establishment of innovation based graduate education and research and development of large laboratory facilities operated by the university in India as an agenda for the IUSSTF. Dr. Venki Narayanamurthy, Dean of Engineering at Harvard, urged the education community to work towards connecting education to the real world. Much of the basic science research for example theoretical physics, or basic biological research needs to connect to the real world. Building scientific capacity is similar to building engineering capacity and infrastructure. He referred to innova-

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tion as a complex ecosystem where technology fosters science and sometimes other way around. India, according to Dr. Narayanmurthy, has a wonderful opportunity to recreate the new, structuring academia to allow and encourage interdisciplinary research, foster innovation and solution -based research. He urged India to look back, keep the good and redefine the new that not only involves funding, but also leadership, management and the culture of the entire training system.

Marta Gray, a professor at MIT and Dr. R. K. Bhan, the secretary of department of biotechnology, India gave the final presentation about a new, innovative and visionary institute being set up in India, Translational Health Science and Research Institute (THSRI). This institute is modeled on the Harvard Science and Technology (HST) department, which runs a unique graduate program that integrates engineering, biomedical research and medicine providing an exceptional multidisciplinary education to the leaders of the future. To quote Dr. Gray, THSRI strives to be the innovation engine that advances human health. Innovation, according to Dr. Gray is realizing and translating ideas by changing communities and the way that people think. Academic institutions, though hugely successful in imparting knowledge and education, are not designed to support the process of innovation. THSRI's concept of bench, bedside and business, she hopes will set an example how it can be achieved in an academic setting. Dr. Bhan, who is becoming more of an Indian visionary for science and education, spoke about THSRI being a programmed way to give more diversity of education to people, so they could be more creative and innovative. Contractual partnerships between THSRI and medical schools in neighborhood, strives to bring the applied and basic science communities together to promote innovative solutions. Change and overhaul of the culture of how science is traditionally done in India is a bit of a battle owing to a cultural resistance to change. A battle that is being won at a great pace by co-partnerships with the US allowing an infusion of new ideas, concepts into the ecosystem, creating an atmosphere whereby India can imbibe American culture, thoughts and ideas, while retaining its own into the Indian ecosystem.

Overall, the mood of the whole day was to instigate and promote an environment that cultivates creativity, innovation and solution based research. Most of the speakers agreed that much of this could be achieved directly by encouraging broader multidisciplinary education, fostering an environment where engineering, science, business, sociology all interact together to solve the present problems and issues facing the world.

Watch Your Emails

for the

Next Visiting Fellows Social

Coming Up in March

At the FAES House

Come join us and meet other visiting fellows at the FAES house

Bring your family and friends

Science Voices from Home (continued from Page 1)

retary of India's Department of Health Research. Dr. Bhan reported about the developments since the creation of the Department of Biotechnology (DBT) in 1986 which gave a new impetus to the development of the field of modern biology and biotechnology in India. In more than a decade of its existence, DBT has promoted and accelerated the pace of development of biotechnology in the country. Through R&D projects, demonstrations and creation of infrastructural facilities, a clear visible impact of this field has been seen. DBT is actively recruiting scientists from around the world to return to one of the ten new institutes it is currently developing in India.

Dr. Katoch, who is the head of the Department of Health Research and the Director-General of the Indian Council of Medical Research (IMCR), emphasized the improved funding possibilities in India during the last few years. The Council promotes biomedical research in the country through intramural as well as extramural research programs. Over the decades, the base of extramural research and its strategies have been expanded by the Council. Drs. Bhan and Katoch described several opportunities available within DBT, ICMR and the the Wellcome Trust to the fellows attending the seminar.

The two speakers highlighted different opportunities and the agencies that fund them. Of special interest were the DBT, Wellcome Trust, Ramalingaswami and JC Bose fellowships. Also, the rapid grant scheme which leads to a decision of the application within 8 weeks was discussed. One of the participating fellows said that he was glad to see major improvements in the way science and research opportunities have progressed in recent years. In summary, the research environment in India appears to be in a big transition and many new possibilities are evolving.

Information about DBT and the IMCR can be found at: http://www.dbtindia.nic.in/ and http://www.icmr.nic.in/.

From the UK, VFC hosted two seminars, one with Dr. Irene Leigh, Dr. Robert Steele, Dr. Alastair Thompson and Dr. Inke Nathke, all from the University of Dundee/Scotland and a second one with Dr. Siamon Gordon from the University

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Visiting Fellows Social Fall 2009

By Dr. Kathrina Quinn

Visiting Fellows Committee hosted their first social mixer event at FAES Social & Academic Center, Old Georgetown Rd. on Friday, October 23rd, 2009. With an attendance of almost 100 fellows, the night was considered a resounding success with plans already underway for another such event in early spring. Approximately 50% of the tickets were sold prior to the event, while the remaining half was sold at the door on the night,

much to the satisfaction of the committee who had embarked on an extensive advertising campaign. The main objective of the social was to give the NIH visiting fellows community, in particular, the opportunity to network with

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of Oxford. Dr. Irene Leigh is the Head of the College of Medicine, Dentistry and Nursing at the University of Dundee and her research focuses on skin cancer and genetic disease. Dr. Robert Steele's main interests are colorectal surgery, screening and the biology of colorectal cancer. Dr. Thompson leads a laboratory and clinical translational research program in Dundee with over £9 million funding since 2001. His research includes linking the important *p53* tumor suppressor network and mathematical modeling to clinical care in breast cancer. Dr. Leigh is professor of Epithelial Biology at the University of Dundee. Her research interest is to determine how specific molecular changes produce changes in cells and ultimately in whole tissues during early stages of colorectal tumorigenesis. Dr. Gordon is a professor in Cellular Pathology at the University of Oxford since 1989 and a fellow of the Royal Society and the Academy of Medical Sciences, London. His research involves understanding the biology of macrophages.

All five speakers emphasized the importance to look ahead of time for possible collaborators and mentors at the university you want to move to because it is very important to get support from experienced grant recipients when applying for the first large grant. They also mentioned that currently translational research is a funding priority and therefore, it is beneficial to include translational aspects into the research proposal. The UK SVH sessions were attended not only by fellows from the UK but also by fellows from different European countries, since it is a relatively easy transition from the US to the UK due to the similar systems. Overall, the speakers left the impression that it is most important to start early in searching for opportunities and to find support at the future university.

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others in a relaxed environment and to make new friends. Both visiting and IRTA fellows alike flocked to FAES house on what was an unusually warm fall night to interact with their peers, let loose and have some fun. Lots of food and drink was consumed and, with the added bonus of our Chinese representative, Xiaoli Du's birthday, much fun was had by all. The night ended on a high note with everyone hitting the dance floor, to tunes varying from Michael Jackson's greatest hits to some cool Latin sounds, compliments of our Chilean fellows. VFC members plan to make the social a regular event on the committee's calendar to help new and existing visiting fellows make the transition from their home countries a little easier.

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NIH VFC by-laws

The following change has been made in the NIH VFC by-laws:

"VFC will elect from within its membership up to three leaders. One of these leaders will be called chair and will be subject to FelCom by-laws in respect to being either an IC or At-large appointee. This chair will represent the VFC to all FelCom meetings. The other leader(s) will serve the VFC committee as co-chairs and not be subject to FelCom IC/At-large appointments. If for some reason no current members of the VFC would take the Chair position of the subcommittee, then VFC will follow the current FelCom protocols to find the Chair."

The NIHVFC is a self-governing body serving the interests of visiting fellows in their transition to life after the NIH by working to create opportunities for visiting fellows to maintain continuity in their research upon returning to their home countries.

We are on the Web!
http://felcom.od.nih.gov/subCommittee/vfc/index.html